EVALUATION OF INDIVIDUAL-CART GARBAGE SERVICE AT MULTI-UNIT PROPERTIES
SOLID WASTE DIVISION
OCTOBER 15, 2004

Sunnyvale General Development Standards, Required Facilities:
Multi-family Developments, 19.38.030:

- All residential uses with 4 or more units shall provide adequate enclosures for the storage of recycling and solid waste containers.
- The solid waste program manager shall advise the director of community development on the size, location, number and placement of bins, containers and enclosures required for a use.
- The director of community development may approve an application, require modifications, or may impose additional requirements to ensure the safe and efficient collection of solid waste and recyclable materials.
- In a complex where driveways do not extend from street to street, a turnaround area for the collection vehicle will be provided.
- Recycling and solid waste enclosures shall be located within 150 feet from any unit unless otherwise approved by director of community development.

Further, section 8.16.030, Solid Waste Container Requirements, states that containers must be maintained in a sanitary condition, and for lids to be kept closed.

Individual cart service consists of 3 containers per household; 64 or 96 gallon garbage cart, 64 gallon recycling cart, and a 64 or 96 gallon yardwaste cart. The recycling and yardwaste carts are included in the rate for refuse cart service. Those multi-unit complexes that have individual carts frequently do not use the yardwaste service because of reduced landscaping and lack of storage space, yet pay for this service in their rates.

The hauler is responsible for determining the safest and most efficient method of servicing each property. Many multi-unit complexes include blind driveways that do not comply with the requirements of 19.38.030, and for these the hauler usually requires residents to bring all carts out to through streets on each service day.

There are many other factors to consider when designing a waste/recycling management system. In dense multi-unit complexes, individual cart service can be problematic, as outlined below.

Rate Impacts:
Due to the less efficient collection system, the cost per ton for single-family garbage and recycling service is double that of centralized garbage service, about $120 per ton compared to $60. The City requires central enclosures for townhome developments in part to minimize charges to residents. As the density of housing increases, it is increasingly important for garbage service to be managed efficiently to minimize the number of new service stops and the cost per ton collected. Inefficient planning may trigger ongoing overtime labor costs for collection drivers, and/or:

- purchase of additional trucks (at approx. $280,000 each)
- hiring additional drivers
- higher insurance and maintenance costs.

All of these additional costs are passed on to the ratepayers.

Storage Considerations:
Storing up to three 3X3 foot carts in each homeowner's garage or side yard will require minimum 18-27 square feet of space dedicated to waste storage per unit, totaling minimum 846-1269 sq. ft. for a 47 unit complex. This is roughly four times the space required for enclosure service. One central enclosure requires about 100-140 square feet; two enclosures total 200-280 sq. ft. of common space.

Environmental Impact:
Individual collection service at multi-unit developments involves as many as 3 carts per unit serviced every week, with 3 different collection vehicles, at different times of day. This will create a greater environmental impact resulting from:

- Increased air pollution from idling at each unit to dump carts and compact material, and more truck time on site compared to regular multi-unit service.
- Increased noise duration from 2-3 trucks dumping up to 3 carts in front of each unit, with associated backup alarms sounding whenever trucks must maneuver. For this complex, this means as much as 60-80 minutes on site compared to about 15 minutes for centralized service.

Safety Hazard:
Dead-end driveways are frequently part of multi-unit designs, and create a significant safety hazard if 40 foot, 25-ton collection vehicles back up repeatedly in residential neighborhoods with narrow private streets. Consequently, those residing in blind driveways must often move carts from their units to an accessible main access drive that extends from street-to-street.

Private roads are often below standard width, and when 3x3 ft. refuse carts are lined up on both sides of the streets the width narrows by at least 6 feet, leaving refuse trucks with sub-standard space to travel and collect safely. Further impacting the narrow travel aisle, the automated arm must extend a minimum of 6 feet from the side of the vehicle to service the carts.

Operational Issues:
The collection vehicles for individual carts are designed to collect containers from the right side of the truck only, on one side of a neighborhood street at a time. These types of trucks (automated) were purchased to maintain safe and efficient routes, thus controlling garbage rates. The configuration of the streets in this complex prevents vehicles from operating as designed, necessitating not only unsafe backing on residential streets, but also time-consuming maneuvering. Each driver will need to exit the trucks to service carts at units on the left side of each street. Additionally, driveways are expected to be impassible while each unit is being serviced, since a truck, carts on both sides, and automated arm will require 16 feet minimum, leaving only 4 feet of the 20 foot wide travel aisle.

Older townhomes designed for individual service before the current city standards were established are the source of chronic complaints due to:

- Inadequate space for set-out of multiple containers at each unit
- Inadequate space for storage, leading many residents to discontinue recycling
- Damage to automobiles due to backing into carts left in front of garages, in driveways, etc.
- Charges billed to the wrong account, and poor accountability for hazardous waste found in carts because carts are mixed up between units.

Aesthetics
Up to 3 individual carts per unit are set out each week, and in multi-unit settings they tend to get scattered and may remain in the public view for days, creating an unpleasant looking neighborhood.
In addition, the wear-and-tear from up to 3 different 25-ton vehicles passing over all paved areas, making up to 3 stops/starts per unit, 52 times per year (47 units = up to 4888-7332 collections/year), will result in higher maintenance costs for the homeowner's association in the form of street repair/replacement.

In contrast to individual cart service, centralized enclosures:

- Involve two trucks, totaling only about 364 collections per year (based on 7 containers).
- Usually do not require trucks to travel over entire length of pavement in neighborhood, nor the stop/start at each unit.
- Cut collection costs in half.
- Shorter duration of noise from truck engines, back-up alarms, and dumping activities; for this complex, this would be about a three-fold reduction in truck-time onsite.
- Frees up minimum 18-27 square feet in each resident's garage for other storage, 846-1269 square feet total for this property.

Individual Solid Waste and Recycling Collection:

Advantages	Disadvantages
Developer does not have to devote 200-280 square feet of common area and funds to build enclosures	Each unit devotes 18-27 square feet of storage space in garage, total 846-1269 sq. ft. for a 47 unit complex
Residents need not walk to enclosure	Carts may not fit through garage door when car parked inside
Carts used to accumulate garbage and recyclables throughout week	Possibly inadequate street frontage for proper cart set-out on service days.
	Carts set out on both sides of street will narrow the 20 ft. drive width down to about 14 feet each collection day
	Collection vehicles will block streets to through traffic while servicing 47 units, 2-3 times each service day.
	Developer required to install 3 additional hammer-head turn-outs, or design for continuous drive-aisles extending street to street. If not, residents may need to roll carts to accessible locations, e.g. at curbside on Evelyn.
	Trucks servicing individual carts have a larger turning radius than those for central enclosures; manufacturer's specifications show 37 ft. inner, and 41.5 wall-to-wall radius (hauler will run test to confirm).
	Up to 94-141 dumps/collections each week instead of around 7, extending duration of truck and container noise, and increasing fuel use
	Cluttered appearance in dense neighborhood
	Service costs twice as much
	Higher street maintenance costs for HOA
	Carts result in a three-fold increase in truck-time onsite, with greater associated noise.